

1 **CLAIMS**

2 Having thus described our invention, what we claim as new and desire to secure by Letters Patent
3 is as follows:

4 1. A method comprising a requester discovering at least one service in a local domain, including
5 the steps of:

6 obtaining an address of a proxy serving as a Service Discovery Proxy for said local domain;

7 establishing a connection to said Service Discovery Proxy; and

8 employing said Service Discovery Proxy in discovering dynamic availability of said at least one
9 service in said local domain.

10 2. A method as recited in claim 1, further comprising employing one service from said at least
11 one service.

12 3. A method as recited in claim 1, wherein the step of obtaining includes:

13 contacting a central registry having addresses for a plurality of Service Discovery Proxies; and

14 selecting the address of a particular Service Discovery Proxy serving the local domain.

15 4. A method as recited in claim 1, wherein the step of establishing includes employing said
16 address in accordance with a transmission protocol.

1 5. A method as recited in claim 4, wherein the transmission protocol is TCP/IP.

2 6. A method as recited in claim 1, wherein the step of employing includes querying said Service

3 Discovery Proxy for a list of services currently active in said local domain.

4 7. A method as recited in claim 1, wherein said requester provides a list of services for which

5 status is queried to said Service Discovery Proxy .

6 8. A method as recited in claim 7, further comprising dynamically updating the list of services

7 currently active in said local domain without registering any of said services with a central

8 registry.

9 9. A method as recited in claim 1, wherein the step of employing includes:

10 said Service Discovery Proxy receiving a request from said requester for service discovery;

11 said Service Discovery Proxy invoking a service discovery protocol in said local domain;

12 customizing responses from services in said local domain; and

13 said Service Discovery Proxy sending customized responses to said requester;

14 10. A method as recited in claim 9, wherein the step of customizing includes at least one

15 function taken from a group of functions including: formatting; filtering; aggregating;

16 encapsulating; segmenting; selecting, and a requester defined function.

17 11. A method as recited in claim 9, wherein the service discovery protocol includes Service

18 Location Protocol.

1 12. A method as recited in claim 1, wherein the step of employing includes receiving
2 information enabling said requester to utilize said at least one service.

3 13. A method comprising forming a Service Discovery Proxy including the steps of:
4 assigning an available proxy to represent a local domain;
5 establishing a connection between said available proxy and a network; and
6 registering said available proxy as the Service Discovery Proxy representing the local domain.

7 14. A method as recited in claim 13, wherein the step of registering is performed employing a
8 central registry;

9 15. A Service Discovery Proxy comprising:
10 a network communication module having an assigned communication address,
11 a service detector module to detect dynamically available services in a local domain represented
12 by said proxy;
13 a processing module to process at least one incoming query from a requester regarding
14 availability of at least one service; and
15 a responding module to form outgoing responses to said at least one incoming query allowing
16 discovery of any of said dynamically available services by said requester.

17 16. A proxy as recited in claim 15, wherein said communication address exists in a central
18 registry to allow said proxy to be accessed from a plurality of requesters.

1 17. A proxy as recited in claim 15, wherein said network communication module further:

2 establishes a listening port for incoming queries; and

3 communicates with a plurality of requesters with a transmission protocol.

4 18. A proxy as recited in claim 15, wherein said network communication module obtains an

5 assigned network communication address from a network address assigning entity; and

6 registers said assigned network communication address with a central registry as a Service

7 Discovery Proxy;

8 19. A proxy as recited in claim 15, wherein said service detector module supports at least one

9 communications functionality from a group of functionalities including:

10 at least one physical communication media;

11 at least one link protocol;

12 at least one network protocol;

13 at least one transmission protocol;

14 at least one service discovery protocol;

15 receiving service queries from said processing module;

16 determining an appropriate communication protocol to be used;

1 performing service discovery in accordance with a selected service discovery protocol; and
2 any combination of these.

3 20. A proxy as recited in claim 15, wherein said service detector module determines an
4 appropriate communication protocol to use.

5 21. A proxy as recited in claim 15, wherein said processing module performs a function taken
6 from a group of functions including:

7 querying the availability of at least one service;

8 querying all available services;

9 querying the employment of said service;

10 interpreting said query and invoking service detector module; and

11 any combination of these.

12 22. A proxy as recited in claim 15, wherein said responding module transmits said query
13 response to the requester.

14 23. A proxy as recited in claim 15, wherein said responding module aggregates a plurality of
15 query responses before transmitting a particular response to the requester.

16 24. An article of manufacture comprising a computer usable medium having computer readable
17 program code means embodied therein for causing requester discovery of a service, the computer

1 readable program code means in said article of manufacture comprising computer readable
2 program code means for causing a computer to effect the steps of claim 1.

3 25. A program storage device readable by machine, tangibly embodying a program of
4 instructions executable by the machine to perform method steps for requester service discovery,
5 said method steps comprising the steps of claim 1.

6 27. A computer program product comprising a computer usable medium having computer
7 readable program code means embodied therein for causing functions of a Service Discovery
8 Proxy, the computer readable program code means in said computer program product comprising
9 computer readable program code means for causing a computer to effect the functions of claim
10 15.